



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,912	12/26/2001	Sung Hee Park	P67475US0	7598
43569	7590	06/20/2007		
MAYER, BROWN, ROWE & MAW LLP 1909 K STREET, N.W. WASHINGTON, DC 20006			EXAMINER WOZNIAK, JAMES S	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 06/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/025,912	Applicant(s) PARK ET AL.	
	Examiner James S. Wozniak	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 12/11/2006, the applicants have submitted an amendment, filed 3/28/2007, amending claim 3 to overcome minor informalities, while arguing to traverse the art rejection based on the limitation regarding the claimed color/shape threshold storing means (*Amendment, Pages 6-8*). Applicants' arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.
2. In response to the amendment of Claim 3, the examiner has withdrawn the previous objection directed towards minor informalities.

Response to Arguments

3. Applicants' arguments have been fully considered but they are not persuasive for the following reasons:

With respect to the independent claims, the applicants argue that Hermes et al ("*Image Retrieval for Information Systems*," 1995) fails to teach a "color/shape threshold retrieving means for retrieving the color histograms and the edge information corresponding to the analyzed words from the color/shape threshold storing means and retrieving an image satisfying

the retrieved color histograms and edge information.” The applicants explain that their invention instead discloses that a query is compared to a histogram and edge information and then the histogram and edge information is used in retrieving an image (*Amendment, Pages 6-7*).

In response the examiner notes that Hermes does teach a color/shape threshold storing means as set forth in the claimed invention. More specifically, Hermes discloses that color histograms and edge information associated with a particular image are mapped to particular words (*Sections 2.1- 2.1.3, Section 3, and Figs. 6 and 8*). When a search takes place, the mapped words are used to retrieve the corresponding histogram and edge information as a part of a desired image, thereby retrieving the image (*Section 3 and Fig. 8*). Thus, since Hermes discloses that histogram and contour information corresponding to a particular image are mapped to search terms for image retrieval, Hermes discloses the aforementioned claim limitation.

From the applicants’ arguments, it appears that it is intended to claim that a NL sentence is used to retrieve a color histogram and edge information, and it is this retrieved histogram and edge information that is compared or matched against images in a database to retrieve a particular image. It is noted, however, that no additional comparison step/means is clearly defined in the claims. The claims only define that an image is retrieved that satisfies such information. This claimed limitation is taught by Hermes, since, as is pointed out above, edge and histogram information associated with a particular image are mapped to search words. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a second matching step between color histogram and edge information and images in an image database) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to the Liu et al reference (*U.S. Patent: 6,970,860*), the applicants argue that Liu does not teach using histograms for text queries as the claimed invention does (Amendment, Page 7). In response, the examiner notes that Liu is utilized for its teaching of a sentence-based query format, wherein a sentence is processed using a parser (*Col. 5, Lines 45-65*). The applicants further argue that Hermes teaches away from such a natural language process (Amendment, Page 8). In response, the examiner notes that the text processing in Liu would fall within the goal discussed in Hermes, since it is merely a well-known extension of the text processing in Hermes and is commonly used in NL processing. The examiner also points out that Hermes further encourages the use of natural language in image retrieval (*Section 4*). Thus, Hermes does not teach away from NL sentence processing, as is argued by the applicants.

Thus, for at least the above reasons, the independent claims remain rejected.

The dependent claims are argued as further limiting rejected independent claims. In response, see the above reply directed towards the independent claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-3 and 5-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes et al ("*Image Retrieval for Information Systems*," 1995) in view of Liu et al (U.S. Patent: 6,970,860).

With respect to **Claims 1, 5, and 7**, Hermes discloses:

A dictionary storing means for storing a dictionary used for processing a natural language (*stored natural language text descriptions associated with image features, Page 396, Section 2*);

A color/shape threshold storing means for storing color histograms mapped to color related words and edge information corresponding to shape related words (*color histograms and related contour data associated with search terms stored in the IRIS system, Pages 396-399, Sections 2.1-2.1.3; and Fig. 2*);

A query input means for receiving a query that describes the color and the shape of the image by using a natural language (*input query in a natural language to the IRIS system, Page 395, Section 2, Page 404, Section 4; and Fig. 8*);

An analyzing means for analyzing the query sentence based on the dictionary information and generating analyzed words (*query processing (analysis) to retrieve an image, Fig. 8; and Page 403, Section 3*);

A color/shape recognizing means for recognizing whether the analyzed words represent the color or the shape (*color and shape based query processing, Fig. 8*);

A color/shape threshold database constructing means for mapping and storing color histograms to color related words and storing edge information corresponding to shape related words (*IRIS database that maps image features including shape and color to user concepts in a natural language for image retrieval, Pages 395-400, Sections 2-2.3*);

A color/shape threshold retrieving means for retrieving the color histograms and the edge information corresponding to the analyzed words from the color/shape threshold storing means and retrieving an image satisfying the retrieved color histograms and edge information (*query processing that retrieves an image corresponding to color and edge information in the IRIS system, Pages 403-404, Section 3; and Fig. 8*); and

A retrieving result output means for providing image data searched in the color/shape threshold retrieving means (*query results and corresponding thumbnail images, Fig. 8*).

Although Hermes discloses the ability of a user to input a natural language query to locate a desired image, Hermes does not explicitly note that such a query may be in the form of a natural language sentence. Hermes also fails to disclose a means for analyzing such a sentence. Liu, however, discloses a process for enabling a user to provide a natural language input to a search engine for image retrieval, wherein the input is in the form of a natural language sentence (*natural language text entry area, Col. 5, Lines 45-55*). Liu also recites a natural language parser that identifies keywords through syntactic and semantic information in the input sentence and utilizes the keywords in a matching process to retrieve an image (*NL parser, Col. 5, Lines 56-65; and the matching of extracted keywords to histogram, shape, and texture information associated with an image, Col. 6, Lines 38-58*).

Additionally, with respect to claim 7, Liu recites an image retrieval method implementation as a program stored on a computer readable medium (*Col. 4, Lines 19-31*).

Hermes and Liu are analogous art because they are from a similar field of endeavor in image retrieval systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Hermes with the natural language sentence

parsing elements taught by Liu in order to provide a means for better understanding and identifying search terms in an image retrieval process (*Liu, Col. 5, Lines 56-65*).

With respect to **Claims 2, 6, and 8**, Liu discloses image annotation when no pertinent images are retrieved (*Col. 9, Lines 18-23; and Col. 5, Lines 19-25*), while Hermes recites query terms related to color and shape as applied to Claim 1.

With respect to **Claim 3**, Hermes further discloses:

The color/shape threshold constructing means maps the word representing the color to the color histogram and stores the word representing the color mapped to the color histogram (*mapped image features associated with a color histogram, Pages 396-397, Section 2.1*), the word not representing the color but reminding the color along with the corresponding color histogram (*additional words mapped to a color histogram, Page 403, Section 3*) and the edge information corresponding to the shape related word (*mapped contour (shape) features for image retrieval, Pages 398-399, Section 2.1.3*).

6. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes et al in view of Liu et al and further in view of Jain et al (*U.S. Patent: 5,983,237*).

With respect to **Claim 4**, Hermes in view of Liu teaches the image query system utilizing color and shape information, as applied to claim 3. Hermes in view of Liu do not specifically disclose the use of a qualification relation, however Jain teaches such a relation (*Col. 9, Lines 12-24*).

Hermes, Liu, and Jain are analogous art because they are from a similar field of endeavor in image retrieval systems. Thus, it would have been obvious to a person of ordinary skill in the

art, at the time of invention, to modify the teachings of Hermes in view of Liu with the qualification relations taught by Jain in order to eliminate unnecessary visual senses when constructing a query (*Jain, Col. 9, Lines 18-20*).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

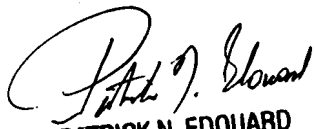
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

Art Unit: 2626

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
5/16/2007


PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER